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ABSTRACT OF THE DISCLOSURE

Raman amplifier having an optical fiber made of a tellurite glass is disclosed. The tellurite glass has at least two further metal oxides, the metals of said respective two oxides being selected from a first group of Nb, W, Ti, Tl, Ta, and Mo and from a second group of Nb, W, Ti, Pb, Sb, In, Bi, Tl, Ta, Mo, Zr, Hf, Cd, Gd, La, and Ba. The so obtained fiber has improved optical (Raman gain) and/or thermal (thermal stability index) properties. Alternatively, the tellurite based glass compositions of the fiber have at least one additional metal oxide, where the metal is selected among Nb, Ti, Tl, Ta, and Mo, the glass showing a particularly high Raman gain. The maximum Raman gain of these glasses is typically higher than 100 times of the maximum Raman gain of pure silica and the respective total cross-section of the Raman spectrum is typically greater than 100 times the total cross-section of pure silica, in the frequency measurement range of 200 cm^{-1} to 1080 cm^{-1} .